

Study of utility of liposomes in drug delivery.

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Abstract

Liposomes are known to be good synthetic vesicles making up by a lipid bilayer that create a hydrophilic environment inside. The composition of this bilayer can be designed and modified chemically to enhance its stability and functionality. It could be used in medicine as driving vehicles and they can transport polar drugs inside them that could insert easily into cells by endocytosis. Herein, we pretend to make a theoretical study of directed therapy using liposomes with aptamers binding to the layer to direct specifically to target cells. We have combined a synthetic analogue of the ligand of our therapeutic target in its surface rising the specificity of liposomes. This synthetic analogue was chosen by a HTS essay using a molecular modeling software where we have changed different amino acids of the ligand in order to increase the affinity to its receptor and block the signaling pathway. Furthermore, we aim for the liposome to take a miRNA as a drug, developing a novel treatment for Calcific Aortic Valve Disease (CAVD).

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